FIG. 1

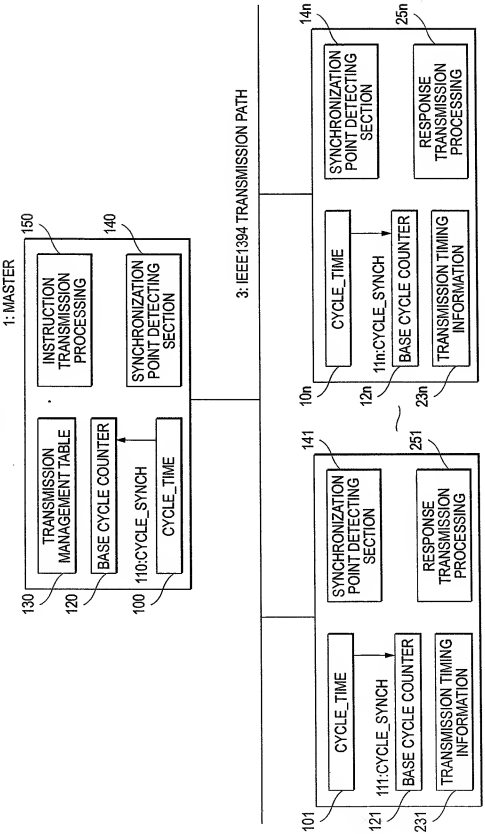

1: MASTER
150
INSTRUCTION TRANSMISSION PROCESSING
140
SYNCHRONIZATION POINT DETECTING SECTION
130
TRANSMISSION MANAGEMENT TABLE
120
BASE CYCLE COUNTER
100
110:CYCLE_SYNCH
CYCLE_TIME
3: IEEE1394 TRANSMISSION PATH
14n
SYNCHRONIZATION POINT DETECTING SECTION
25n
RESPONSE TRANSMISSION PROCESSING
10n
CYCLE_TIME
11n:CYCLE_SYNCH
12n
BASE CYCLE COUNTER
23n
TRANSMISSION TIMING INFORMATION
2n: SLAVE
141
SYNCHRONIZATION POINT DETECTING SECTION
251
RESPONSE TRANSMISSION PROCESSING
101
CYCLE_TIME
121
111:CYCLE_SYNCH
BASE CYCLE COUNTER
231
TRANSMISSION TIMING INFORMATION
21: SLAVE

FIG. 2

130: MASTER TRANSMISSION MANAGEMENT TABLE

TOTAL NUMBER OF CYCLES	m + 1			
CYCLE COUNTER	0	1		m
NUMBER OF INST-RUCTIONS TO TRANSMIT	2	2		2
DESTINATION SLAVE NO.	#1 #2	#3 #4		#n – 1 #n

231: SLAVE TRANSMISSION TIMING INFORMATION

TOTAL NUMBER OF CYCLES	m + 1
INSTRUCTION CYCLE	0
RESPONSE CYCLE	0

~

23n: SLAVE TRANSMISSION TIMING INFORMATION

TOTAL NUMBER OF CYCLES	m + 1
INSTRUCTION CYCLE	m
RESPONSE CYCLE	m

FIG. 3

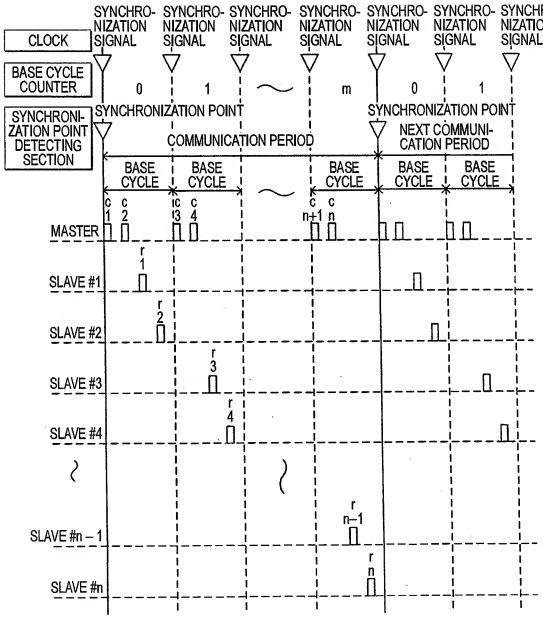

SYNCHRO-NIZATION SIGNAL
CLOCK
BASE CYCLE COUNTER
SYNCHRONI-ZATION POINT DETECTING SECTION
0
1
m
SYNCHRONIZATION POINT
COMMUNICATION PERIOD
NEXT COMMUNI-CATION PERIOD
BASE CYCLE
c 1
c 2
c 3
c 4
c n-1
c n
MASTER
SLAVE #1
SLAVE #2
SLAVE #3
SLAVE #4
SLAVE #n – 1
SLAVE #n
r 1
r 2
r 3
r 4
r n–1
r n

FIG. 4

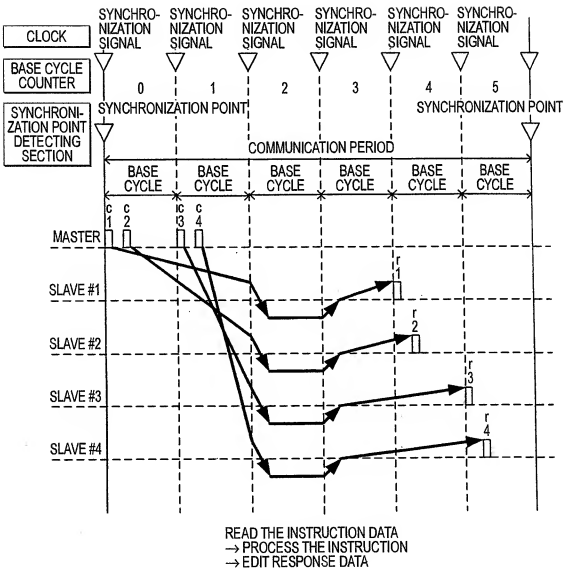


FIG. 5

SECOND_COUNT (7bit)	CYCLE_COUNT (13bit)	CYCLE_OFFSET (12bit)

FIG. 6

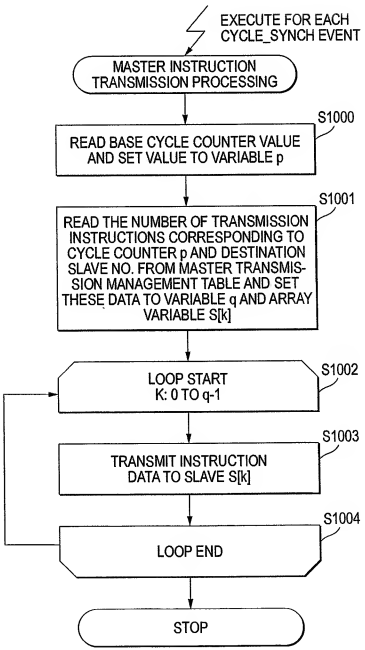

EXECUTE FOR EACH CYCLE_SYNCH EVENT
MASTER INSTRUCTION TRANSMISSION PROCESSING
S1000
READ BASE CYCLE COUNTER VALUE AND SET VALUE TO VARIABLE p
S1001
READ THE NUMBER OF TRANSMISSION INSTRUCTIONS CORRESPONDING TO CYCLE COUNTER p AND DESTINATION SLAVE NO. FROM MASTER TRANSMISSION MANAGEMENT TABLE AND SET THESE DATA TO VARIABLE q AND ARRAY VARIABLE S[k]
S1002
LOOP START K: 0 TO q-1
S1003
TRANSMIT INSTRUCTION DATA TO SLAVE S[k]
S1004
LOOP END
STOP

FIG. 7

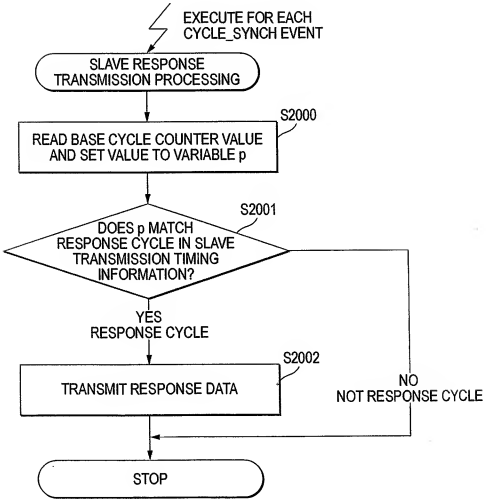

EXECUTE FOR EACH CYCLE_SYNCH EVENT
SLAVE RESPONSE TRANSMISSION PROCESSING
S2000
READ BASE CYCLE COUNTER VALUE AND SET VALUE TO VARIABLE p
S2001
DOES p MATCH RESPONSE CYCLE IN SLAVE TRANSMISSION TIMING INFORMATION?
YES
RESPONSE CYCLE
S2002
TRANSMIT RESPONSE DATA
NO
NOT RESPONSE CYCLE
STOP

FIG. 8

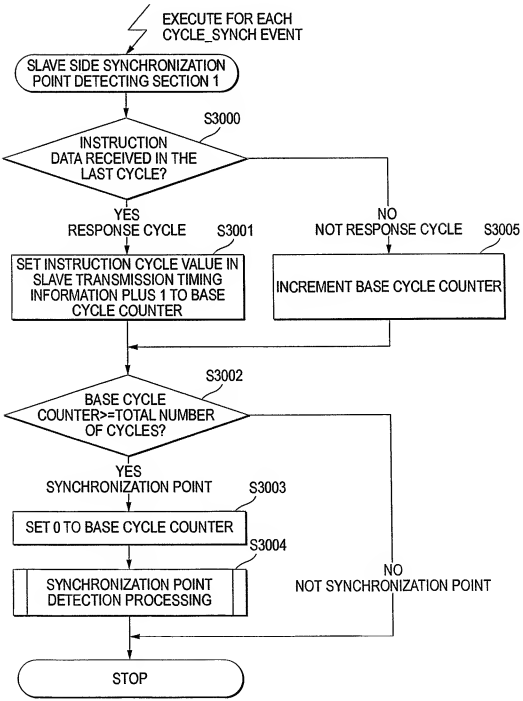

EXECUTE FOR EACH CYCLE_SYNCH EVENT
SLAVE SIDE SYNCHRONIZATION POINT DETECTING SECTION 1
S3000
INSTRUCTION DATA RECEIVED IN THE LAST CYCLE?
YES
RESPONSE CYCLE
S3001
SET INSTRUCTION CYCLE VALUE IN SLAVE TRANSMISSION TIMING INFORMATION PLUS 1 TO BASE CYCLE COUNTER
NO
NOT RESPONSE CYCLE
S3005
INCREMENT BASE CYCLE COUNTER
S3002
BASE CYCLE COUNTER>=TOTAL NUMBER OF CYCLES?
YES
SYNCHRONIZATION POINT
S3003
SET 0 TO BASE CYCLE COUNTER
S3004
SYNCHRONIZATION POINT DETECTION PROCESSING
NO
NOT SYNCHRONIZATION POINT
STOP

FIG. 9

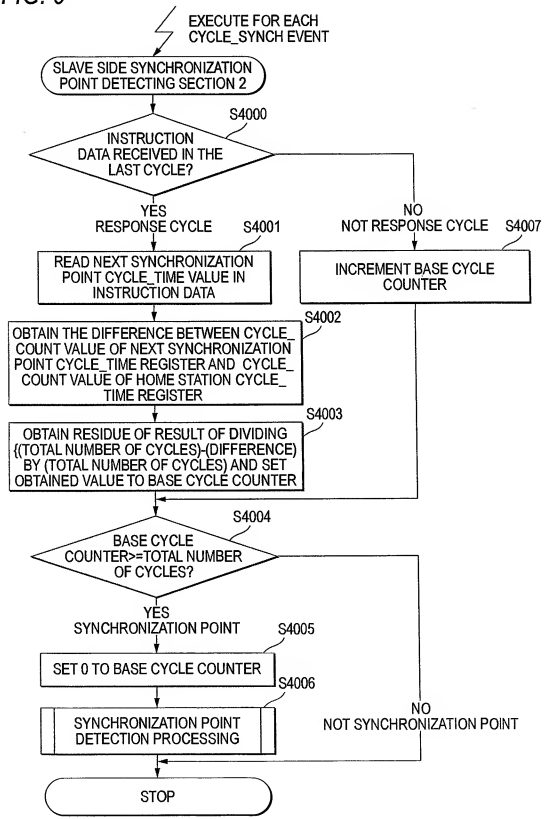

EXECUTE FOR EACH CYCLE_SYNCH EVENT
SLAVE SIDE SYNCHRONIZATION POINT DETECTING SECTION 2
S4000
INSTRUCTION DATA RECEIVED IN THE LAST CYCLE?
YES
RESPONSE CYCLE
S4001
READ NEXT SYNCHRONIZATION POINT CYCLE_TIME VALUE IN INSTRUCTION DATA
S4002
OBTAIN THE DIFFERENCE BETWEEN CYCLE_COUNT VALUE OF NEXT SYNCHRONIZATION POINT CYCLE_TIME REGISTER AND CYCLE_COUNT VALUE OF HOME STATION CYCLE_TIME REGISTER
S4003
OBTAIN RESIDUE OF RESULT OF DIVIDING {(TOTAL NUMBER OF CYCLES)-(DIFFERENCE)} BY (TOTAL NUMBER OF CYCLES) AND SET OBTAINED VALUE TO BASE CYCLE COUNTER
NO
NOT RESPONSE CYCLE
S4007
INCREMENT BASE CYCLE COUNTER
S4004
BASE CYCLE COUNTER>=TOTAL NUMBER OF CYCLES?
YES
SYNCHRONIZATION POINT
S4005
SET 0 TO BASE CYCLE COUNTER
S4006
SYNCHRONIZATION POINT DETECTION PROCESSING
NO
NOT SYNCHRONIZATION POINT
STOP

FIG. 10

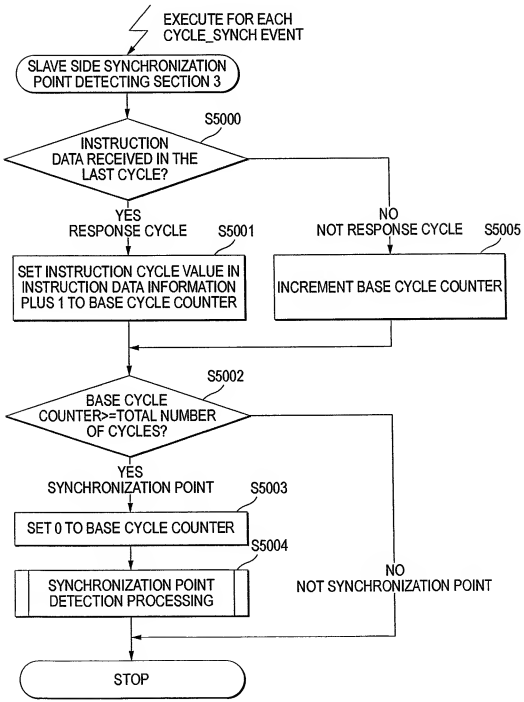
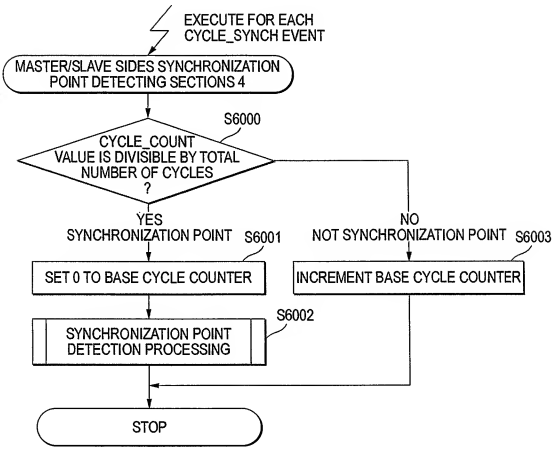
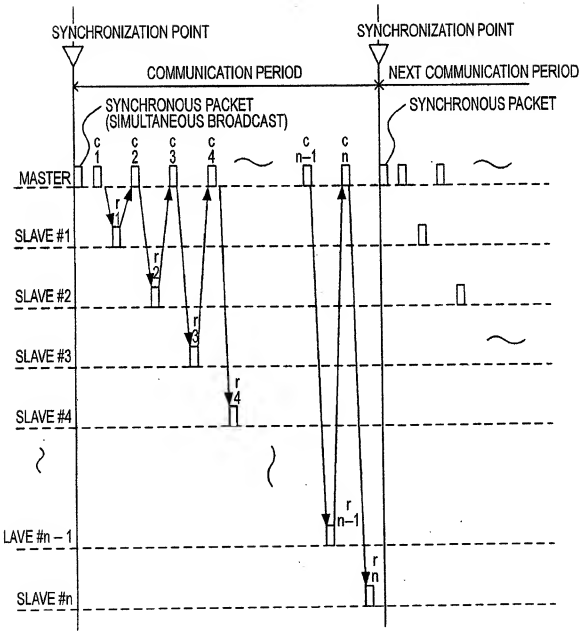

EXECUTE FOR EACH CYCLE_SYNCH EVENT
SLAVE SIDE SYNCHRONIZATION POINT DETECTING SECTION 3
S5000
INSTRUCTION DATA RECEIVED IN THE LAST CYCLE?
YES
RESPONSE CYCLE
S5001
SET INSTRUCTION CYCLE VALUE IN INSTRUCTION DATA INFORMATION PLUS 1 TO BASE CYCLE COUNTER
NO
NOT RESPONSE CYCLE
S5005
INCREMENT BASE CYCLE COUNTER
S5002
BASE CYCLE COUNTER>=TOTAL NUMBER OF CYCLES?
YES
SYNCHRONIZATION POINT
S5003
SET 0 TO BASE CYCLE COUNTER
S5004
SYNCHRONIZATION POINT DETECTION PROCESSING
NO
NOT SYNCHRONIZATION POINT
STOP

FIG. 11


EXECUTE FOR EACH CYCLE_SYNCH EVENT
MASTER/SLAVE SIDES SYNCHRONIZATION POINT DETECTING SECTIONS 4
S6000
CYCLE_COUNT VALUE IS DIVISIBLE BY TOTAL NUMBER OF CYCLES ?
YES
SYNCHRONIZATION POINT
S6001
SET 0 TO BASE CYCLE COUNTER
S6002
SYNCHRONIZATION POINT DETECTION PROCESSING
NO
NOT SYNCHRONIZATION POINT
S6003
INCREMENT BASE CYCLE COUNTER
STOP

PRIOR ART

FIG. 12



PRIOR ART

FIG. 13